Industrie und Luftfahrtelektronik GmbH

SN10 / SN10B USB Adapter Manual

Software Version 2.34

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Foreword

Thank you for purchasing one of the finest and most reliable sailplane instruments available, and for the trust you have placed in us. Our goal is to make your soaring more enjoyable and productive by minimizing cockpit time spent on calculation and planning. This means more time looking out of the cockpit, for faster and safer soaring.

Before flying with the SN10, please take the time to read this manual, preferably with an operating SN10 or the SN10 demonstration program. This manual will help you configure and install your new SN10, and aid you in using the SN10 to best advantage during flight. If you haven't already done so, we recommend you step through the SN10 demonstration program's narrated introduction (this demonstration program runs on any computer equipped with Microsoft Windows, and is available from ILEC or your dealer's Web site).

The opinions of our customers are important to us ! Please send us your comments and suggestions (ILECgmbh@t-online.de or Nadler & Associates <drn@Nadler.com>).

Happy and Safe Soaring from Nadler & Associates and ILEC GmbH !

WARNING	No instrument, SN10 or otherwise, can replace pilotage and judgment. The SN10 provides base-line calculations and important information, but is not a replacement for your certificated primary flight instruments and may not be used as such. If the SN-10 receives incorrect inputs, the SN10 will display incorrect and possibly dangerous information. All decisions during flight must be made by the pilot !

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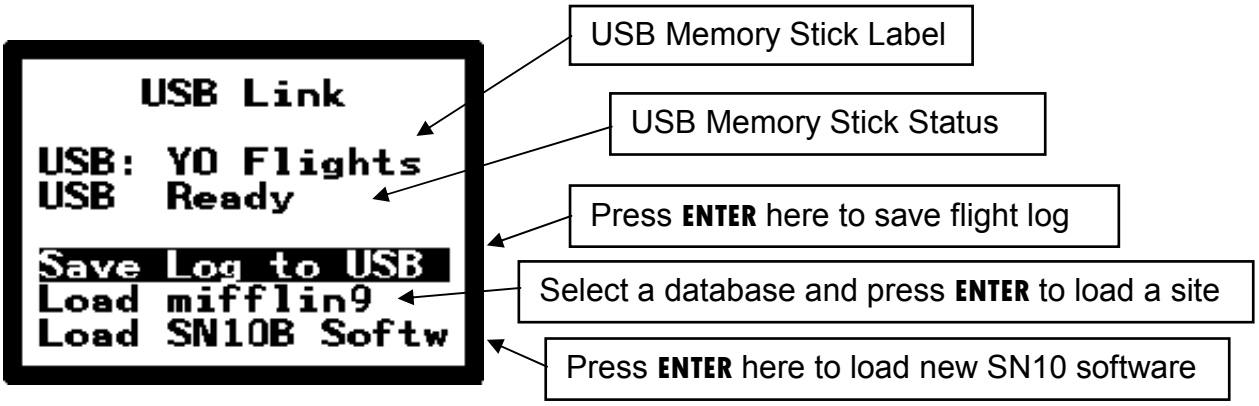
DOS, MS-DOS, Windows, Windows 95, Windows 98, Windows NT, Windows XP, and Windows 2000 are trademarks of Microsoft Corporation.

10 USB Adapter Option

With the optional ILEC SN10 USB Adapter, you no longer need to bring a PC to your glider. Using a USB Memory Stick (also called a "thumb drive"), you can:

- save flight logs to the memory stick,
- load new site databases into your SN10 from the memory stick, and
- load new releases of SN10 software from the memory stick.

When you insert a USB memory stick into the SN10's USB adapter, the SN10 will display a "USB Stick Ready" message, and the USB Link page will display. This page will be the only active page until the memory stick is removed.


USB Link
USB: YO Flights
USB Ready
Save Log to USB
Load mifflin9
Load SN10B Softw
USB Memory Stick Label
USB Memory Stick Status
Press ENTER here to save flight log
Select a database and press ENTER to load a site
Press ENTER here to load new SN10 software

10.1 Saving your log file onto a USB Memory Stick

After each day's flying, plug a USB memory stick into the USB adapter. After the SN10 displays the USB Link page, place the cursor on the **Save Log to USB** field and press **ENTER** to save your flight log.

Computing the security key and storing the flight log takes about one minute per hour of flight. This means you will usually need to have power on for around 5 minutes to save your flight - don't unplug the battery until your flight is completely saved !

CAUTION	**A Power Interruption Will Corrupt your Memory Stick.** As with all devices that use USB memory sticks with Microsoft DOS formatting, a power interruption during writing often corrupts the file system on the memory stick. **<u>Always</u> keep a spare USB memory stick handy just in case !**

10.2 Loading a new NDB Site Database from a Memory Stick

Using your PC, copy the NDB files (ILEC SN10 formatted site databases) you wish to use to the root (top-level folder) of a memory stick. After the SN10 displays the USB Link page, place the cursor on the **Load …** field, turn the **VALUE** knob to select the NDB file you wish to load, and press **ENTER** to load the database.

Please note:

- Before you plug in the memory stick, select the site you wish to use and erase it on the *Site Selection* page. Otherwise, you will have to unplug the memory stick to change pages to the *Site Selection* page.

- Due to Microsoft Corporation FAT32 licensing issues, the file names of NDB files on the memory stick are limited to 8 characters plus the NDB suffix, for example **`Mifflin9.NDB`**. If you use a longer file name, you will see a cryptic abbreviation on the SN10 instead of the full name (but it will still work just fine).

- Only files ending with ".NDB" will be listed. Files ending with ".NDB.TXT" will not be listed and cannot be loaded – make sure the file suffix is correct. Sometimes Microsoft Internet Explorer adds an unwanted ".TXT" suffix to a file during download, in which case you must rename the file.

- If the NDB file is invalid, you will get a cryptic error message when the SN10 tries to load it. NDB files downloaded from the World-Wide Turnpoint Exchange or created with StrePla are normally good. However, if you create your own NDB files, check them on your PC before trying to load them into your SN10 (use the DBC or DBC32 utility).

10.3 Loading new ILEC SN10 Software from Memory Stick

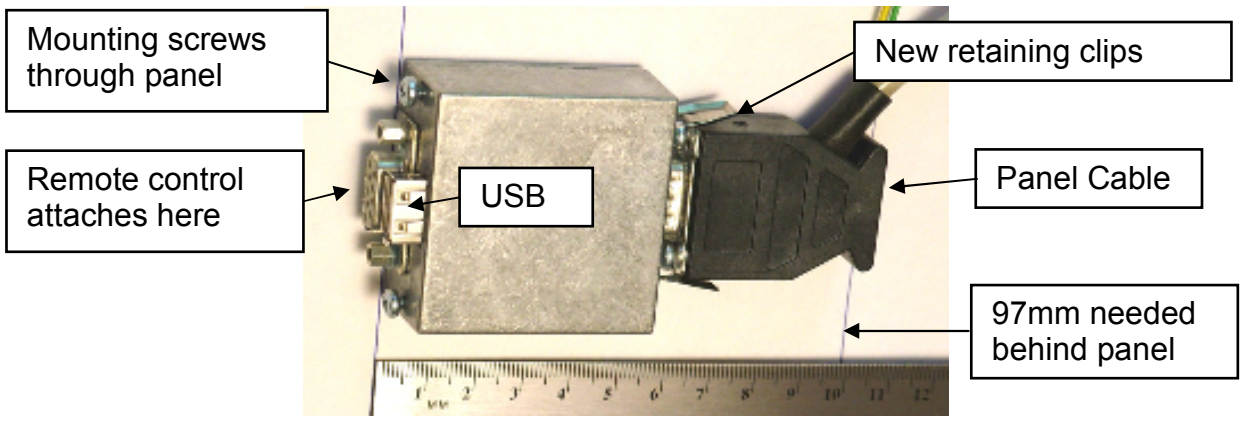
Install the latest SN10 software on your PC. This places the HEX file containing the SN10 operating software to the PC folder C:\SN10. For the SN10B, this file is named SN10B.HEX (just SN10.HEX for the original SN10). Then, copy the HEX file to the root (top-level folder) of a memory stick.

When you insert the memory stick containing the HEX file into the SN10 USB adapter, the SN10 will display the **Load SN10B Softw** field as illustrated above. Place the cursor on this field, press **ENTER** , and wait several minutes. While the new software is loading there is no indication of activity at the SN10 – be patient !

CAUTION	**A Power Interruption Will Leave Your SN10 Inoperative.** Do not interrupt power to the SN10 during the software update process. If you do interrupt power, turn the power on again with the USB stick containing the HEX file inserted, and wait ~5 minutes for the update process to restart and complete.

10.4 Installation

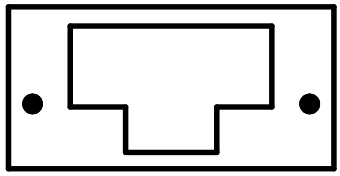
The USB adapter plugs into the end of the ILEC SN10 Panel Cable. This section explains how to enlarge the panel cutout, connect the cabling, and load the required new software. Here's what the USB adapter looks like when cabled and ready to install behind the instrument panel:



10.4.1 Panel Cut-Out for USB Adapter

Before cutting, make sure there is adequate space behind the panel for the USB adapter and that there is adequate depth to accommodate the required cabling.

The cut-out in the instrument panel must be enlarged to fit the USB connector in addition to the DB9 connector (the panel-side DB9 connector on the USB adapter can still be used as before, to connect to the optional remote control or a PC). Here's the layout (outer square is space required behind panel, cutout is inner line, dots are screw-holes):

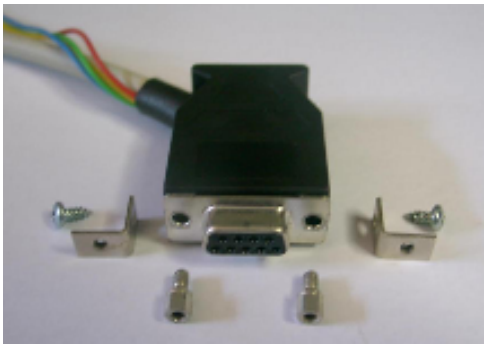


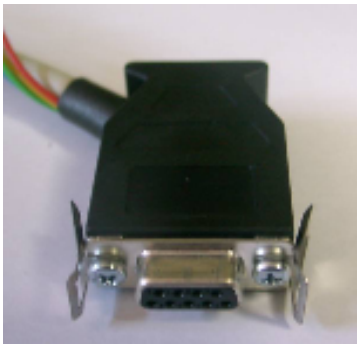
Note: Do **not** make a small cutout just barely fitting the DB9 connector. Make a cutout as shown by the inner line in the diagram above.

The total depth required behind the panel for adapter plus cabling is 97 mm (3" 13/16).

10.4.2 Connecting the USB Adapter to the Panel Cable

First, remove the parts shown below from the panel cable as shown on the left below. Then, install the two clips on the side of the panel cable as shown on the right.





Finally, clip the panel cable to the USB adapter.

10.4.3 Initial Installation of ILEC SN10 Software with USB support

To use the USB adapter, ILEC SN10 software version 2.34 or later must be loaded into the SN10. After installing the USB adapter, a software update can be installed from the USB adapter without using a PC as follows (if the SN10 is running software earlier than 2.33x3):

- Place the appropriate HEX file (SN10B.HEX or SN10.HEX) on a memory stick
- After installing the USB adapter, with the power off, insert the USB memory stick into the adapter
- Turn on the SN10.
- If you are currently running version 2.32, it should automatically start loading the new software (the SN10 will not show anything to indicate this, but it will stop responding to the knobs). Wait ~5 minutes for the software load to complete (**do not** turn off the SN10).
- For versions 2.31 or older, enter *Setup* mode, turn to the *SN10 Resets* page, put the cursor on **Load**, and press **ENTER**. Wait ~5 minutes for the software load to complete (**do not** turn off the SN10).